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EXAMINER

HOBAN, MATTHEW E

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.



***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 6-7 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by MacDonald in his publication entitled “Fluorescence of Europium Tungstate”.

Macdonald teaches a europium tungstate composition  $\text{Eu}_2(\text{WO}_4)_3$  by a method as seen in paragraph two. A powder is produced from this method. The powder has a fluorescence spectrum as seen in Figure 1, where red light is produced having a wavelength from 610-620 nm. Major excitation peaks are seen at 203, 466 and 411 nm.

**Regarding Claim 1, 6-7:** Macdonald teaches a composition where  $x=0$ , Y is 3, M is W, and Ln is Y. However, Ln goes to 0 and is thus not included in the composition.

**Regarding Claim 9:** Macdonald shows the spectrum of the produced tungstate, where its fluorescence is seen between 610 and 620 nm, which is in the red spectrum.

**Regarding Claim 13:** The reagents are mixed and are then fired at 1000C for one hour.

3. Claims 1, 6-10 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Borchadt in 3250722.

**Regarding Claims 1:** Borchadt teaches various phosphor compositions reading on the instant claims as can be seen in Column 4, Lines 12-60. Of particular note are compositions 1-2, 12, 14, 18 and 35 (Compositions numbered chronologically in the order in which they appear).

**Regarding Claim 6:** Borchadt teaches compositions where M is W. Exemplary compositions are for example Compositions 1, 2, and 35.

**Regarding Claim 7:** Borchadt teaches compositions where Ln is Y. Exemplary compositions are for example Composition 18.

**Regarding Claim 8 and 10:** Borchadt teaches a practice application of his phosphors as it applied to Fluorescent lights. For this application the phosphor is milled to a particle diameter of between 3-12 microns (See Column 8, Lines 60-70). A fluorescent light is a light-emitting device.

**Regarding Claim 9:** Borchadt is silent as to the fluorescent spectrum of these powders. However, red emission must be inherent in the powders of Borchadt based

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on his compositions are the same as those claimed. A phosphor having the same cominherent and processing means must inherently have the same properties, as the same composition cannot have mutually exclusive sets of properties. Thus Borchadt's phosphor must inherently fluoresce in this region. See MPEP 2112.

**Regarding Claim 13:** The phosphor of Borchadt are made in the same manner as the instant claims, where reagents of the components are intimately mixed phosphor at a temperature between 700-1500C for a period of about 1-4 hours.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of

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the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claim 10-12 rejected under 35 U.S.C. 103(a) as being unpatentable over MacDonald in his publication entitled "Fluorescence of Europium Tungstate as applied to claim 1 above, and further in view of Wakefield in 2005/0013943 (Effective Filing Date: 8/22/2002).

8. As discussed earlier MacDonald teaches a europium tungstate composition  $\text{Eu}_2(\text{WO}_4)_3$  by a method as seen in paragraph two. A powder is produced from this method. The powder has a fluorescence spectrum as seen in Figure 1, where red light is produced having a wavelength from 610-620 nm. Major excitation peaks are seen at 203, 466 and 411 nm.

9. MacDonald does not teach the use of his phosphors in any devices and is silent as to possible applications of his teachings.

10. However, Wakefield teaches that Europium tungstanate phosphors can find use in a variety of applications as seen in Paragraphs 16-18. Particularly Wakefield teaches the use of such phosphors in the LCD display field as well as in solid state lighting,

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where the phosphor is excited by a near UV LED. The near-UV range is included within the claimed range in claim 11, which states 220-550 nm. In the art, NUV can refer to a range from about 300-400 nm.

### ***Response to Arguments***

11. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection. It is noted that the amendment alters the scope of the claim by limiting the range of the "x" value thereby avoiding the previous rejection is no longer applicable. A new art rejection, however, has been made based on this amendment.

### ***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew E. Hoban whose telephone number is (571) 270-3585. The examiner can normally be reached on Monday - Friday from 7:30 AM to 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J.A. LORENZO/  
Supervisory Patent Examiner, Art Unit 1793

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